 Claims 1, 5-17, 19, 20, 24, 28, 29

Please cancel claims 2-4, 18, 21-23, 25-27, and 30 without prejudice.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (**Currently Amended**) A method of therapy for a mammal at risk of, or afflicted with, loss of or damage to myocardium, the method comprising implanting a preparation of myogenic precursor cells into said mammal at a site at risk of, or afflicted with, loss of or damage to myocardium, and treating said myogenic precursor cells with an amount of a morphogen sufficient to promote proliferation or differentiation of said myogenic precursor cells into functional myocardium, wherein said morphogen comprises a pair of folded polypeptides, the amino acid sequence of each of which comprises a sequence having at least 70% amino acid sequence homology with the C-terminal seven-cysteine domain of human OP-1, mouse OP-1, human OP-2 or mouse OP-2, residues 38-139 of SEQ ID NOs. 5, 6, 7 or 8, respectively, and induces a cascade of tissue-specific morphogenesis culminating in the formation of functional mammalian myocardium.

2-4. (**Canceled**)

5. (**Previously Presented**) The method of claim 1, wherein said myogenic precursor cells are: mammalian skeletal muscle satellite cells, embryonic myogenic precursor cells, or cells of a histocompatible mammalian myogenic precursor cell line.

6. (**Previously Presented**) The method of claim 1, wherein said myogenic precursor cells are autologous skeletal muscle satellite cells.

7. (**Previously Presented**) The method of claim 1, wherein said mammal is afflicted with a condition selected from: myocardial infarction or congestive heart failure.

8. (**Previously Presented**) The method of claim 1, wherein treating said myogenic precursor cells is conducted prior to implanting said preparation of myogenic precursor cells into said mammal.

9. (**Previously Presented**) The method of claim 1, wherein treating said myogenic precursor cells is conducted simultaneously with implanting said preparation of myogenic precursor cells into said mammal.

10. (**Previously Presented**) The method of claim 1, wherein treating said myogenic precursor cells is conducted subsequent to implanting said preparation of myogenic precursor cells into said mammal.

11. (**Previously Presented**) The method of claim 10, wherein treating said myogenic precursor cells is conducted at least once a week for a period of at least four weeks.

12. (**Previously Presented**) The method of claim 10, wherein treating said myogenic precursor cells is conducted at least once a month for a period of at least one year.

13. (**Previously Presented**) The method of claim 1, wherein treating said myogenic precursor cells is conducted with morphogen at a concentration of about 0.01 - 1000 ng/ml.

14. (**Previously Presented**) The method of claim 1, wherein treating said myogenic precursor cells is conducted with morphogen at a concentration of about 0.1 - 100 ng/ml.

15. (**Currently Amended**) A method of promoting proliferation of myogenic precursor cells or differentiation of myogenic precursor cells into functional myocardium, comprising: (a) contacting said cells with a morphogen in an amount effective to induce said proliferation or differentiation; and (b) maintaining said cells in a morphogenically permissive environment, wherein said morphogen comprises a pair of folded polypeptides, the amino acid sequence of each of which comprises a sequence having at least 70% amino acid sequence homology with the C-terminal seven-cysteine domain of human OP-1, mouse OP-1, human OP-2 or mouse OP-2, represented by SEQ ID NOs. 4, 5, 6, or 7, respectively, and induces a cascade of tissue-specific morphogenesis culminating in the formation of functional mammalian myocardium.

16. (**Previously Presented**) The method of claim 1, wherein said morphogen is: a pro-form of a morphogen, a soluble form of a morphogen, a mature morphogen, or a C-terminal fragment of a morphogen comprising at least the seven cysteine domain of said morphogen.

17. (**Previously Presented**) The method of claim 1, wherein said morphogen is osteogenic proteins or bone morphogenic proteins.

18. (**Canceled**).

19. (**Previously Presented**) The method of claim 1, wherein said morphogen is OP- 1, CBMP-2A (BMP-2), or CBMP-2B (BMP-4).

20. (**Currently Amended**) A therapeutic composition for promoting the repair or regeneration of mammalian myocardium comprising isolated mammalian myogenic precursor cells, and an amount of a morphogen sufficient to promote proliferation or differentiation of said myogenic precursor cells into functional myocardium in a morphogenically permissive environment, wherein said morphogen comprises a pair of folded polypeptides, the amino acid sequence of each of which comprises a sequence having at least 70% amino acid sequence homology with the C-terminal seven-cysteine domain of human OP-1, mouse OP-1, human OP-2 or mouse OP-2, represented by SEQ ID NOs. 4, 5, 6, or 7, respectively, and induces a cascade of tissue-specific morphogenesis culminating in the formation of functional mammalian myocardium.

21-23. (**Canceled**)

24. (**Currently Amended**) A method of culturing mammalian myogenic precursor cells, comprising isolating said myogenic precursor cells, and culturing said myogenic precursor cells in a medium comprising an amount of a morphogen sufficient to promote proliferation or differentiation of said myogenic precursor cells into functional myocardium in a morphogenically permissive environment, wherein said morphogen comprises a pair of folded polypeptides, the amino acid sequence of each of which comprises a sequence having at least 70% amino acid sequence homology with the C-terminal seven-cysteine domain of human OP-1, mouse OP-1, human OP-2 or mouse OP-2, represented by SEQ ID NOs. 4, 5, 6, or 7, respectively, and induces a cascade of tissue-specific morphogenesis culminating in the formation of functional mammalian myocardium.

25-27. (**Canceled**)

28. (**Currently Amended**) A method of inducing myogenic precursor cells, naturally competent to differentiate into skeletal or smooth muscle, to differentiate into cardiomyocytes, said method comprising: (a) contacting said myogenic precursor cells with a morphogen; and (b) maintaining the product of (a) in an environment morphogenically permissive for cardiomyogenesis, wherein said morphogen comprises a

pair of folded polypeptides, the amino acid sequence of each of which comprises a sequence having at least 70% amino acid sequence homology with the C-terminal seven-cysteine domain of human OP-1, mouse OP-1, human OP-2 or mouse OP-2, represented by SEQ ID NOs. 4, 5, 6, or 7, respectively, and induces a cascade of tissue-specific morphogenesis culminating in the formation of functional mammalian myocardium.

29. (**Previously Presented**) A method of producing replacement cardiomyocytes in a mammal in need thereof, said method comprising implanting into said mammal myogenic precursor cells induced by the method of claim 28.

30. (**Canceled**)